

Alaska Industry Council

April 2010



**Federal Aviation
Administration**



AGENDA

- Opening Remarks – **Jere Hayslett**
- WAAS Intelsat GEO (CRW) Outage Impacts – **Leo Eldredge**
- Surveillance and Broadcast Services Update – **Jere Hayslett**
- SBS Implementation brief – **Wes Mooty**
- Round Table - **All**



Crow Creek Pass 6,000 ft.



**Federal Aviation
Administration**

WAAS Intelsat GEO (CRW) Outage Impacts

April 14, 2010

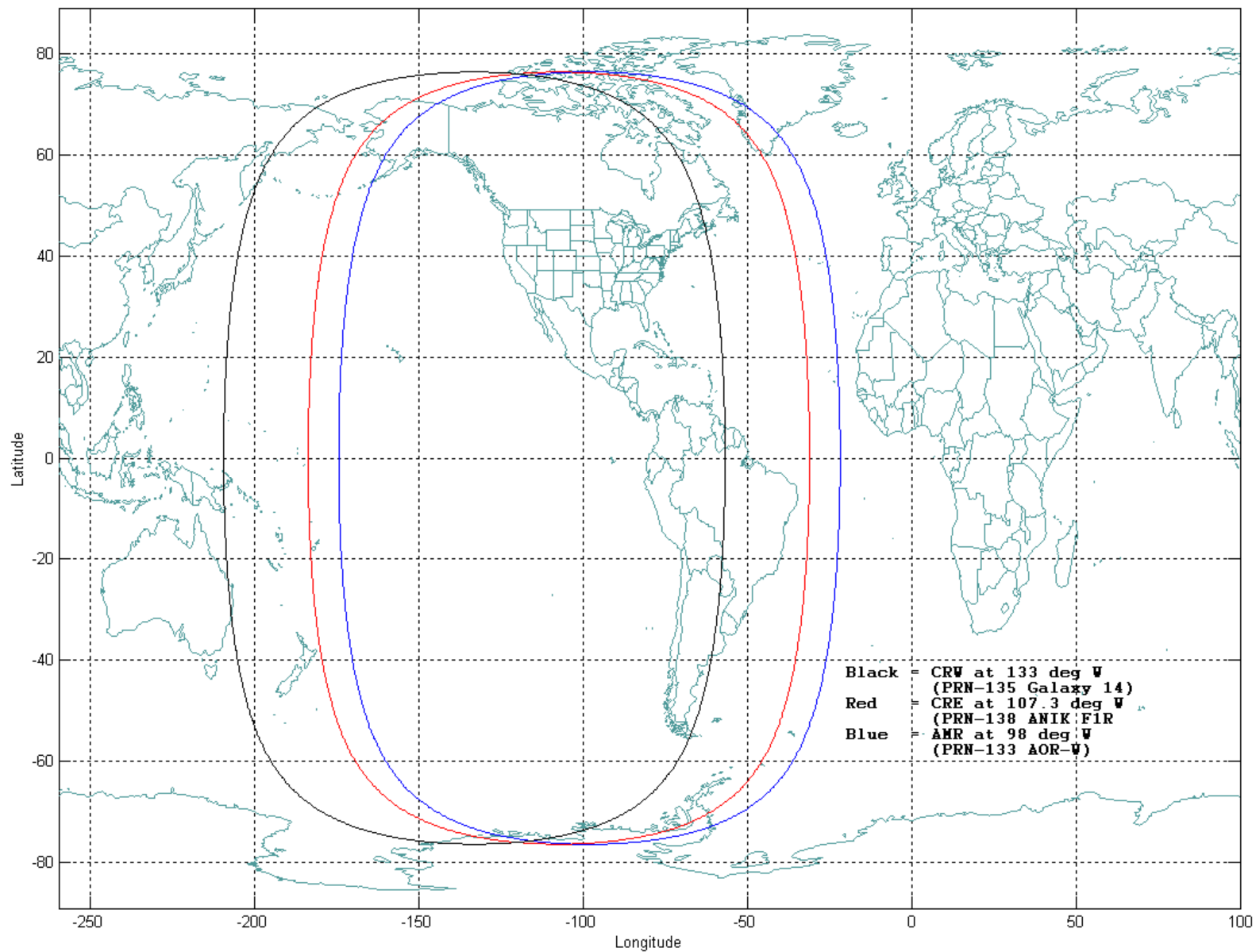


Issue

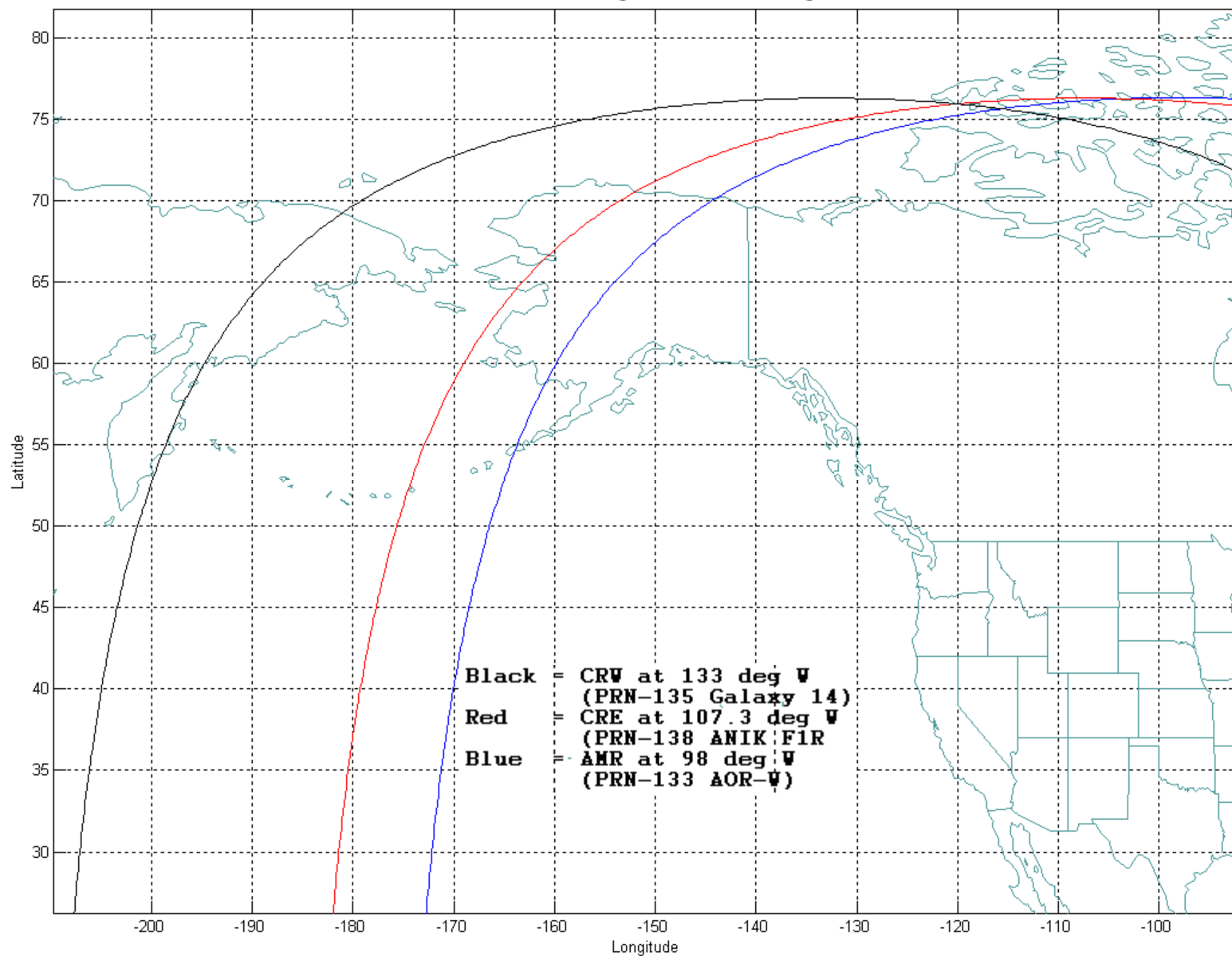
- **WAAS Currently Leases Two GEOs**
 - Intelsat (CRW) at 133 W
 - PanAmSat (CRE) at 107.3 W
- **Intelsat (CRW) TT&C Has Failed**
 - Provider Lost Ability to Control the GEO's Position on April 3rd
 - GEO Will Drift Out of Useable Orbit Over Next 2-4 Weeks
- **Loss of WAAS Service in NW Alaska is Imminent**
 - No Impact to LPV Service at the 16 Affected Airports
 - No LPV approaches published at these airports
 - LNAV Service Available Using GPS Only
 - Enroute/Terminal Service Including Q-Routes Available with Receiver Autonomous Integrity Monitoring (RAIM)
 - Users Will Need to Plan Around RAIM Availability
 - Requires a pre-flight RAIM prediction



WAAS GEO 5 Degree Elevation Angles

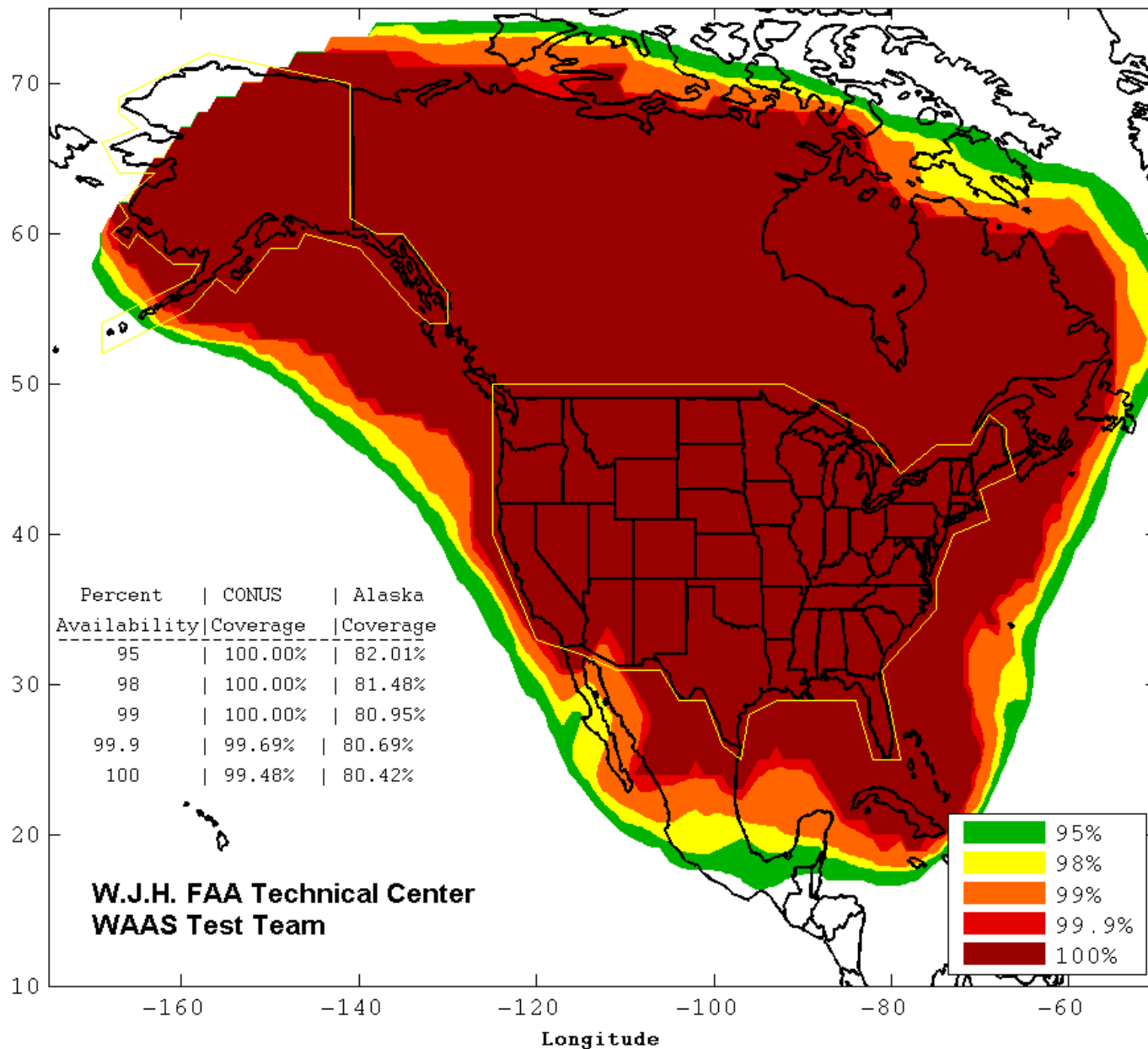


WAAS GEO 5 Degree Elevation Angles

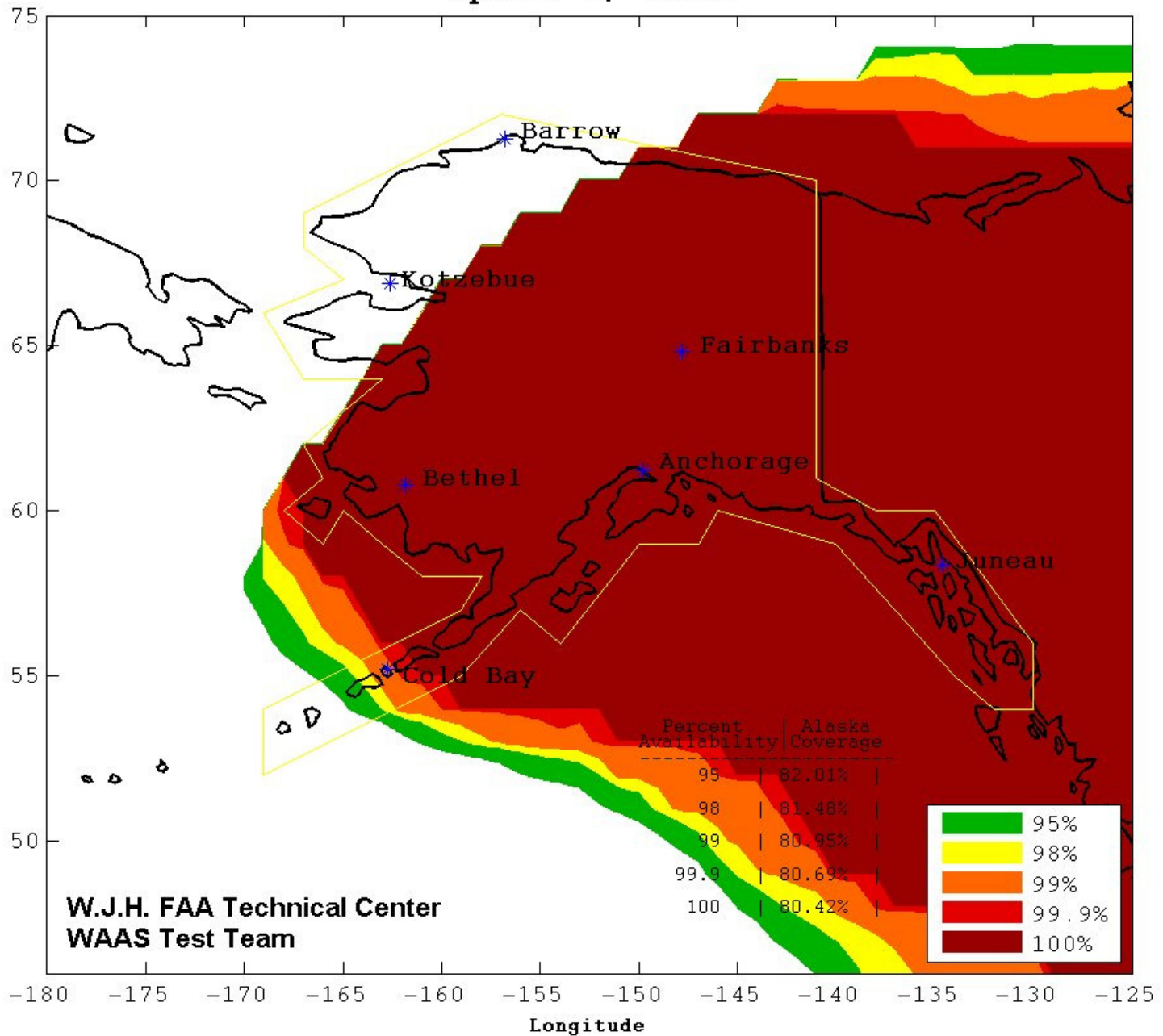


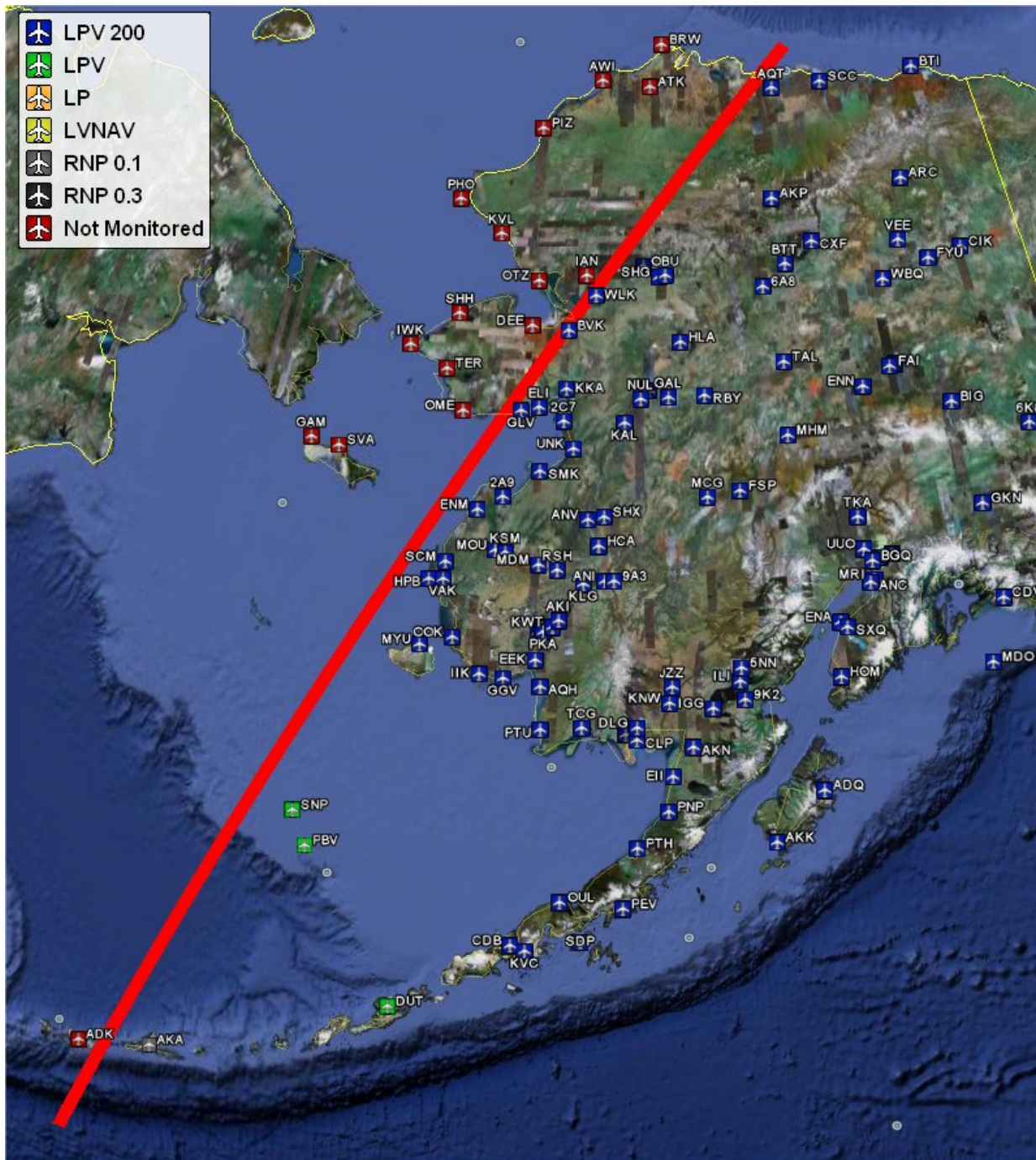
WAAS LPV Coverage Contours CRE Only

April 1, 2010



WAAS LPV Coverage Contours CRE Only April 1, 2010





Alaska Airport Impacts

FAA ID	Name of Airport	Part 139	Runway	LPV Impact	Lowest GPS LNAV minima
ADK	Adak		23	N/A	1300 - 3
ATK	Atkasuk Edward Burnell Sr Memorial		06/24	N/A	400 - 1
AWI	Wainwright		23	N/A	400 - 1
BRW	Wiley Post-Will Rogers Memorial		24	N/A	400 - 1
DEE	Deering		02/11/20	N/A	600 - 1
GAM	Gambell		16/34	N/A	800 - 1
IAN	Bob Baker Mem.		06	N/A	1300 - 1 1/4
IWK	Wales		18	N/A	600 - 1
KVL	Kivalina		12/13	N/A	400 - 1
OME	Nome		28	N/A	400 - 3/4
OTZ	Ralph Wien Memorial		09	N/A	400 - 1
PHO	Point Hope		19	N/A	300 - 1
PIZ	Point Lay LRRS		05/23	N/A	400 - 1
SHH	Shishmaref		05	N/A	300 - 1
SVA	Savoonga		05	N/A	500 - 1
TER	Teller		07	N/A	800 - 1



NAS Impacts

- **Users Outside the Affected Area Will Continue to Have LPV service**
- **Due to Lack of Redundant GEO Coverage, WAAS Users May Experience Temporary Service Interruptions**
 - If WAAS GEO Uplink Station (GUS) Switchovers Occur
 - Potential to Occur 3-5 Times per Year
 - Up to 5 Minutes May be Required to Restore LPV Service
- **Single Point Failure Situation Exists Until Redundancy Restored**
 - WAAS Team Integrating Gap Filler GEO (AMR) at this Time
 - Planned for December 2010



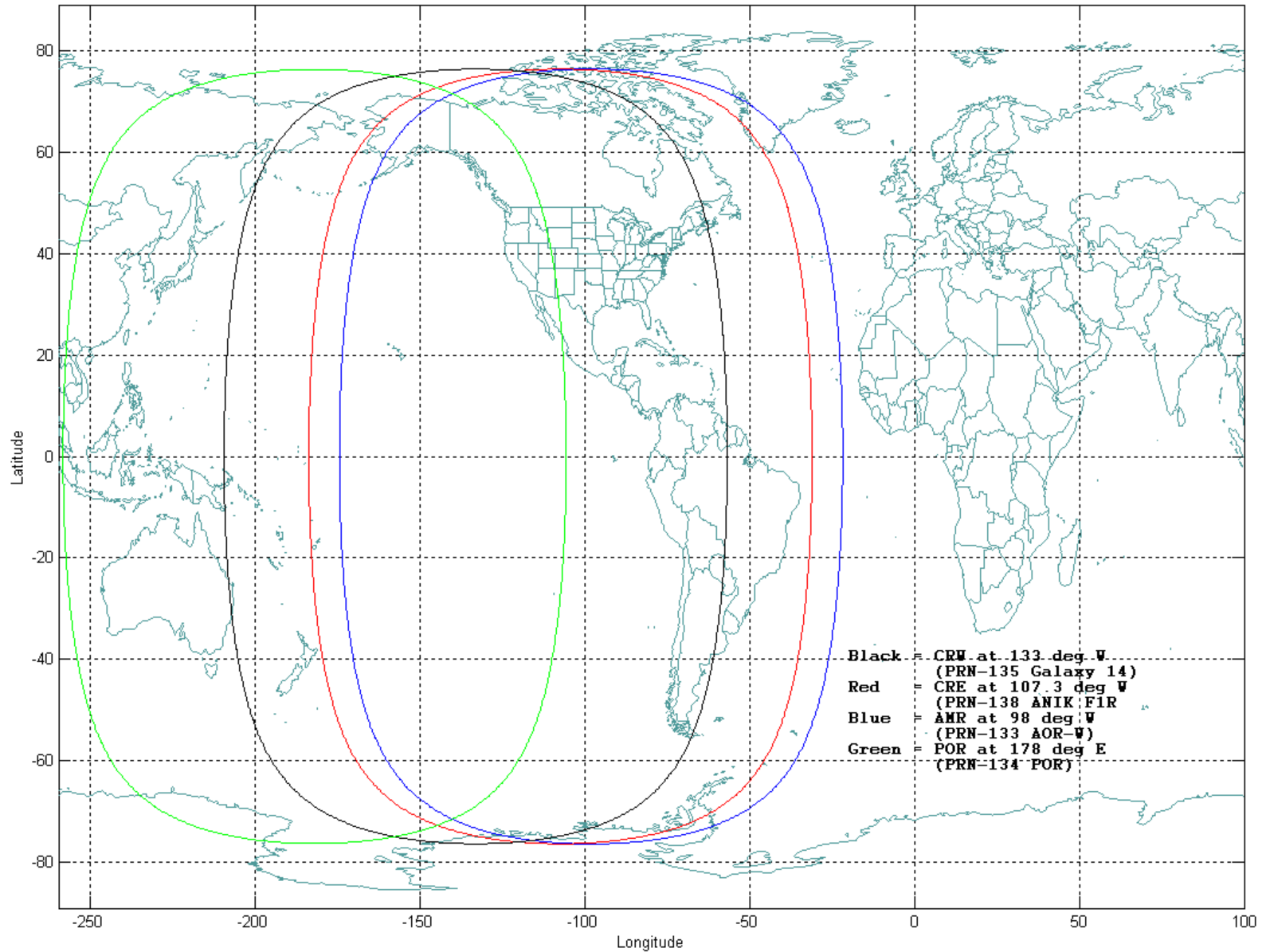
Mitigations

- **Investigate Integration of Inmarsat-III Pacific Ocean Region GEO**
 - Formerly used by WAAS Prior to Switching to Intelsat (CRW)
 - Lockheed Martin Working this with AJW-431
- **Accelerate Procurement of 5th GEO**
 - Will Replan Resources Saved from Loss of CRW
- **Publish Advisory NOTAM - Complete**
- **Publish Final NOTAM Prior to Loss of GEO**
 - Format and Content Being Coordinated with AFS
- **Investigate Accelerating Gap Filler GEO Integration**
 - Potential to Implement as Emergency Release



Inmarsat POR Alternative

WAAS GEO 5 Degree Elevation Angles



Next Steps

- **Continue to Monitor GEO Performance**
- **Determine Date to Issue Final NOTAMs**
- **Continue Action Plans for Mitigations**



Surveillance and Broadcast Services

Alaska Aviation Industry Council Meeting

By: Jere Hayslett

April 2010



**Federal Aviation
Administration**



Key Site Status

- **Essential Services**

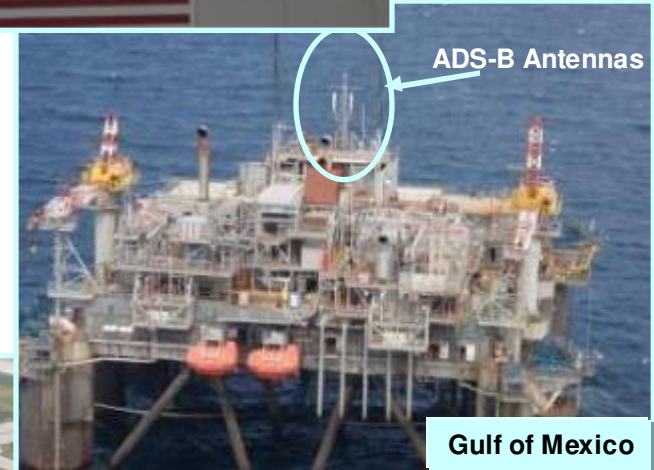
- Miami Area In Service Decision – November 2008✓

- **Critical Services**

- Louisville Initial Operating Capability (IOC) – November 2009✓
- Gulf of Mexico IOC –December 2009✓
- Philadelphia IOC – March 2010✓
- Juneau IOC – April 2010
- In Service Decision – September 2010



Louisville



ADS-B Antennas

Gulf of Mexico



Philadelphia

Rulemaking Next Steps: Schedule to Final Rule

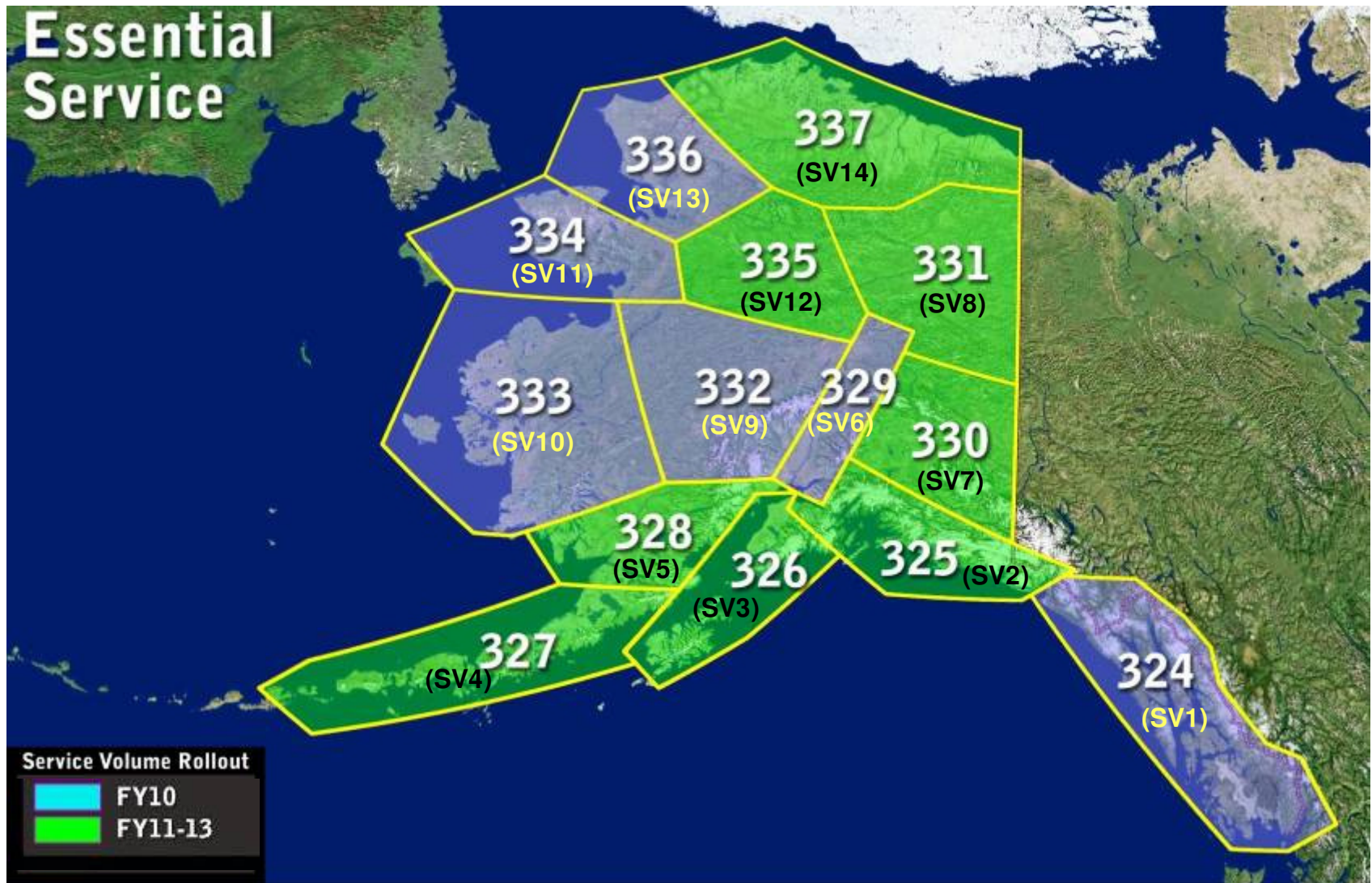
Milestone	Planned Date of Completion	Status / Comments
FAA Rulemaking Team finalizes RPR Phase 3	January 14, 2009	Complete
RPR Phase 3 Submitted to ARM	January 21, 2009	Complete
Rulemaking Council Approval of RPR	January 27, 2009	Complete
Rulemaking Team Drafts Final Rule	May 2009	Complete
Final Rule Economic Assessment	August 2009	Complete
Final Rule Concurrence through Directors	October 2009	Complete
Final Rule Concurrence through Associates	November 2009	Complete
Final Rule Concurrence through Administrator	December 2009	Complete
Final Rule Approved through OST	February 2010	Complete
Final Rule Approved through OMB	April 2010	
Final Rule Published in Federal Register	April 2010 *	

RPR = Rulemaking Project Record

* Rule may be published May 2010, if OMB takes the allotted 90 days to review.



Alaska Ground Infrastructure Deployment



Alaska Business Case Update

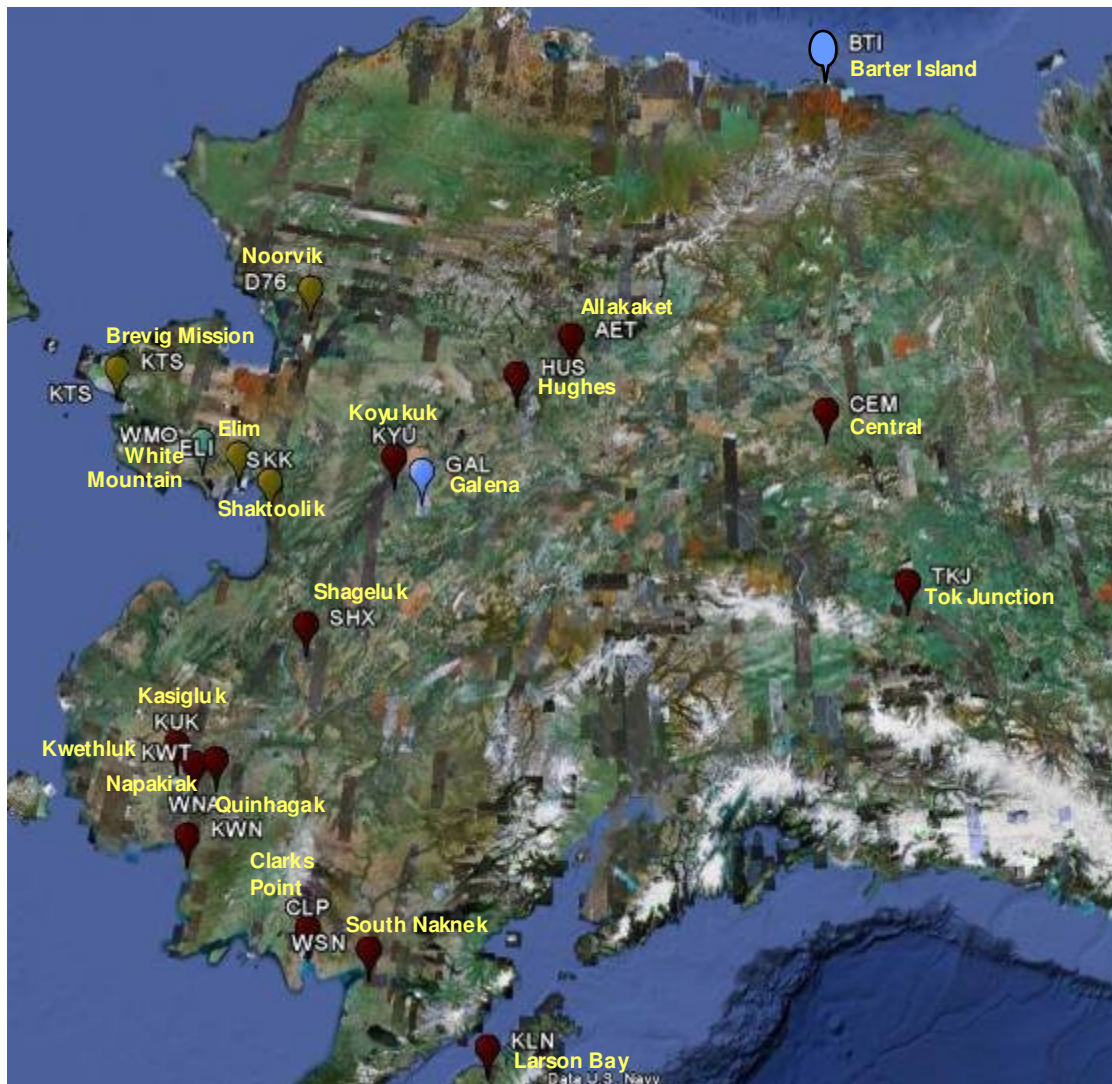
Cost Benefit Analysis – PenAir

- **Peninsula Airways (PenAir) carries 94% of the passengers in SV 4/327**
- **The PenAir fleet is currently ~37% equipped**
- **Below is the SV 4/327 business case scenario, if PenAir equips 100% of their SV 4/327 operations**

Scenario	Avionics Costs	Avionics Benefits	Avionics B/C Ratio	Ground station-related Costs	Ground station-related benefits	Ground station-related B/C Ratio	Total Costs	Total Benefits	Total B/C Ratio
Current (Penair 37% equipped, some other operators equipped)	\$0.53	\$2.39	4.5	\$8.83	\$5.82	0.7	\$9.36	\$8.22	0.9
Assume Penair 100% Equipped, no change to other operators	\$1.41	\$6.37	4.5	\$8.83	\$16.31	1.8	\$10.24	\$22.68	2.2
All SV operators 100% equipped	\$3.26	\$9.27	2.8	\$8.83	\$18.06	2.0	\$12.08	\$27.33	2.3

**All values
in PV \$M**

IFR Airport Upgrades



Needs new AWS	Airport Code
Barter Island-installed	BTI
Galena-installed	GAL
FY 10 Installation	
Noorvik (Dec 2009)	D76
Shaktolik (Dec 2009)	SKK
Elim	ELI
Brevig Mission	KTS
White Mountain	WMO
Installation based on equipage	
Hughes	HUS
Allakaket	AET
Central	CEM
Larson Bay	KLN
Kasigluk	KUK
Koyukuk	KYU
Kwethluk	KWT
Napakiak	WNA
Quinhagak	KWN
Clarks Point	CLP
Shageluk	SHX
South Naknek	WSN
Tok Junction	TKJ
RCO	Airport Code
FY 10 Installation	
Brevig Mission	KTS
White Mountain	WMO
Installation based on equipage	
Larson Bay	KLN



Surveillance & Broadcast Services. WSA
(W) 907-271-5780 – Program office

www.adsb.gov

AWOS Updates

- **Shungnak**
 - Commissioned Dec '09
- **Brevig Mission**
 - Permit approved – install at spring thaw
 - Power and Telco issues being worked
- **White Mountain**
 - Materials arrived at site
 - Installation to proceed at spring thaw
- **Noorvik & Shaktoolik**
 - JAls planned for April based on circuit availability
- **Elim**
 - 7460 complete
 - Permitting and lease in process

Chevak



Juneau WAM Status

- **IOC (Service to Anchorage Air Traffic) January 2010 - Complete**
- **Williams Mountain**
 - Buildings, tower, solar arrays, propane, and power systems installed
 - AT&T not received FTA for telco link; no antennas or RF cable installed due to icing
 - Working alternate com solutions to keep power system operational over winter
 - Planning controlled facility cold soak to prevent unmonitored system failure
- **Lynns Intersection**
 - Buildings, tower, and solar arrays installed
 - Interconnecting power and propane systems to bring up site
 - Expediting antenna and RF cable install before tower is un-climbable due to weather
- **Saddle Mountain**
 - SOA wrapping up cable ladder and DC power system work in new building
 - TSSC crews in Juneau to support FAA equipment relocation and installation

Point Howard



Alaska ADS-B Essential Services

- **ITT systems currently installed at:**
 - Sisters Island – SV-178 -- Operational
 - AT&T Mile 11 – SV-178 -- Operational
 - Wrangell – SV-324 -- Testing phase
 - Pedro Dome – SV-328 -- Operational
- **ITT Installs to be completed in April/May:**
 - Angoon – SV-324 -- 16 APR
 - High Mountain – SV-324 -- 16 APR
 - Mt. Ripinski – SV-324 -- 23 APR
 - Gunnuk – SV-324 -- 30 APR
 - Sunnahae – SV-324 -- 30 APR
 - Cape Spencer – SV-324 -- 14 MAY
 - Cantwell – SV-329 -- 23 APR
 - Bethel – SV-333 -- 07 MAY
 - Pt. Hope – SV-336 -- 07 MAY

Sunnahae

